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Peter B Martine
Martine Penilla & Gencarella
Suite 200
710 Lakeway Drive
Sunnyvale, CA 94085

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WASHINGTON, JAMARES	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,111	YOSHIDA, SEISHIN	
	Examiner	Art Unit	
	JAMARES WASHINGTON	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7-11 and 13-19* is/are rejected.

7)☐ Claim(s) *4-6 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 21, 2009 has been entered.

Response to Amendment

Amendments and response received September 21, 2009 have been entered. Claims 1, 2 and 4-19 are currently pending in this application. Claims 1, 18 and 19 have been amended. Amendments and response are addressed hereinbelow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadahide Sawamura et al (US 5012299) in view of Gábor Horváth et al (The Journal of Experimental Biology 205, pg. 3281) and Dale Axelrod (US 5860518).

Regarding claim 1, Sawamura et al discloses a method for setting a color tone of a monochrome image (Col. 1 line 65 through Col. 2 line 11 wherein the tone of a single-color image can be set for copying), comprising the steps of:

(a) displaying a color tone setting window, using a graphical user interface (Col. 3 lines 61-65 wherein there is displayed a "color chart"; Fig. 2), for use in setting a color tone of a monochrome image (Col. 3 lines 53-59 wherein single color copies are monochrome images utilizing a single tint), the color tone setting window including an ink color circle for specifying color component intensities representing three chromatic primary color inks with a single specified point therein (Col. 3 lines 66-68; Fig. 17b wherein the color circle specifies the color component intensities of Yellow, Magenta, and Cyan as shown and the "single point" within the circle establishes the amount of intensities to obtain the chosen color within the color circle); and

(b) determining the color component intensities representing the three chromatic primary color inks as parameters defining the color tone of the monochrome image in accordance with the position of a point specified in the ink color circle using a color tone determination module (Col. 3 line 66 through Col. 4 line 2 using CPU 21 as shown in Fig. 6), wherein

the ink color circle is configured to enable the color component intensities representing the three chromatic primary color inks to be visually recognized from the position in the ink

color circle (Col. 4 lines 20-24 wherein the user can select the color by visually recognizing intended color in the color circle; Also see Col. 9 lines 16-19).

Sawamura et al fails to disclose or fairly suggest wherein an arbitrary point in the ink color circle is mapped to a corresponding point in an ink color triangle which is a hypothetical equilateral triangle corresponding to the ink color circle, the ink color triangle circumscribes the ink color circle, and an arbitrary point in the ink color circle is mapped to a corresponding point in an inscribed circle of the ink color triangle.

Horváth et al, in the same field of endeavor of determining intensity values utilizing a color triangle (Pg. 3284, Col. 2 lines 32-37), teaches an ink color triangle which is an equilateral triangle (Pg. 3283 Fig. E, equilateral color triangle). The "hypothetical" ink color triangle of Horváth et al is fully capable of circumscribing the ink color circle to insure all points within the circle have a corresponding point lying within the "hypothetical" color triangle to provide equations for finding the intensities of each point within the circle. Mapping the arbitrary point from the color circle to a corresponding point in an ink color triangle which circumscribes the circle would have been obvious to one of ordinary skill in the art given the teachings of Horváth et al because the color triangle is one of the simplest color models. Its shape and color locations are easily visualized, more so than a color circle (Axelrod, Col. 2 lines 20-23) and, as shown by Horváth et al, the equations for finding an intensity within the color triangle are well known in the art (Pg. 3284 Eq. 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for an arbitrary point in the color circle as disclosed by Sawamura et al to be mapped to a corresponding point in the circumscribed equilateral color triangle as taught by Horváth et al

to simplify the calculations for determining the intensity at the chosen point. The mapping of the point within the color circle to a corresponding point within an equilateral triangle would have been a predictable modification because of the known advantages listed above and the modification would have constituted the mere arrangement of old elements with each performing the same function it had been known to perform, the combination yielding no more than one would expect from such an arrangement. In addition, three vertices of the ink color triangle correspond to three chromatic primary colors of cyan, magenta, and yellow (As shown above, the ink color circle specifies the color component intensities Yellow, Magenta and Cyan. Sawamura et al discloses wherein the "color chart" is not limited to a color circle. For example...a triangular graph may be employed" at Col. 19 lines 25-30. Utilizing the color components as previously used for the color circle, the vertices of the triangular graph would be constructed using Yellow, Magenta and Cyan as well, since the graphs would reflect the same information).

Sawamura et al fails to disclose or fairly suggest the ink color triangle having a common center with the ink color circle such that the color component intensities representing the three chromatic primary color inks at the corresponding point are determined in accordance with lengths of three lines drawn perpendicularly to three sides of the ink color triangle respectively from the corresponding point.

Horváth et al teaches the color component intensities representing the three chromatic primary color inks at the "corresponding" point are determined in accordance with lengths of three lines drawn perpendicularly to three side of the ink color triangle respectively from the "corresponding" point (Pg. 3283 Fig. E, "corresponding point" C determined by lengths of M_G,

M_B and M_R as shown. Position of a visual stimulus C with spectral components M_G, M_B and M_R. Utilizing the above combination, the green blue and red components would be replaced with cyan, magenta and yellow.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the ink color circle as disclosed by Sawamura et al to share a common center with the equilateral color triangle as taught by Horváth et al to provide a common reference point for mapping the intensity point within the color circle to the corresponding point within the color triangle as the color triangle provides a simpler model for calculating a given intensity point within the color triangle as discussed above. A person of ordinary skill in the art would have had good reason to pursue the known option of providing the color circle and corresponding color triangle with a common center because it would require no more than ordinary skill and common sense to provide a common reference point for mapping coordinates of one entity to the coordinates of another. Determining the color component intensities representing the three chromatic primary color inks at the "corresponding" point in accordance with lengths of the three lines drawn perpendicularly to three sides of the ink color triangle is a well known technique, as shown by Horváth et al. A person of ordinary skill in the art would have recognized that applying the known technique would have yielded predictable results and would have improved the color intensity calculations by providing simplified, well known equations.

Regarding claim 17, Sawamura et al discloses a method for setting a color tone of a monochrome image, comprising the steps of:

(a) displaying a color tone setting window, using a graphical user interface module, for use in setting a color tone of a monochrome image (see rejection of claim 1),

(b) determining the color component intensities representing the three chromatic primary color inks as parameters defining the color tone of the monochrome image in accordance with the position of a point specified in the ink color triangle using a color tone determination module (see rejection of claim 1 wherein the color triangle is used for determining the color component intensities representing the three chromatic primary color inks in accordance with the position within the triangle).

Sawamura et al discloses the color tone setting window including an ink color circle wherein the ink color circle is mapped to a "virtual" ink color triangle (see rejection of claim 1 above).

Sawamura et al fails to disclose the color tone setting window including an ink color triangle for specifying color component intensities representing three chromatic primary color inks with a single specified point therein; and

wherein the ink color triangle is configured to enable the color component intensities representing the three chromatic primary color inks to be visually recognized from the position in the ink color triangle, and three vertices of the ink color triangle correspond to three chromatic primary colors of cyan, magenta, and yellow (see rejection of claim 1).

Horváth et al teaches an ink color triangle which is an equilateral triangle (Pg. 3283 Fig. E, equilateral color triangle) as rejected in claim 1 above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as disclosed by Sawamura et al wherein an ink color circle is utilized to

substitute an ink color triangle in the place of the ink color circle, as taught by Horváth et al because the shape and color locations of the ink color triangle are easily visualized, more so than a color circle (Axelrod, Col. 2 lines 20-23). Since each individual element and its function, as described in claim 17, are shown in the prior art, albeit shown in separate references, the difference between the claimed subject matter and that of the prior art rests not on any individual element or function but in the very combination itself. The combination would provide simple substitution of one known element for another to obtain predictable results.

Regarding claim 18, Sawamura et al discloses an apparatus (Fig. 1 color copying machine) for setting a color tone of a monochrome image, comprising:

a user interface module (Fig. 3 operating section) configured to display a color tone setting window for use in setting a color tone of a monochrome image, the color tone setting window including an ink color circle or an ink color triangle for specifying color component intensities representing three chromatic primary color inks with a single specified point (see rejection of claim 1); and

a color tone determining module (Fig. 6 numeral 21 CPU for controlling the circuit) configured to determine the color component intensities representing the three chromatic primary color inks as parameters defining the color tone of the monochrome image in accordance with the position of a point specified in the ink color circle or the ink color triangle (see rejection of claim 1), wherein

the ink color circle or the ink color triangle is configured to enable the color component intensities representing the three chromatic primary color inks to be visually recognized from the position in the ink color circle or the ink color triangle (see rejection of claim 1),

three vertices of the ink color triangle correspond to three chromatic primary colors of cyan, magenta, and yellow (see rejection of claim 1),

in a case where the color tone window includes the ink color circle, an arbitrary point in the ink color circle is mapped to a corresponding point in the ink color triangle which is a hypothetical equilateral triangle corresponding to the ink color circle (see rejection of claim 1), and

the ink color triangle is an equilateral triangle having a common center with the ink color circle such that the color component intensities representing the three chromatic primary color inks at the corresponding point are determined in accordance with lengths of three lines drawn perpendicularly to three sides of the ink color triangle respectively from the corresponding point (see rejection of claim 1),

the ink color triangle circumscribes the ink color circle (see rejection of claim 1), and

an arbitrary point in the ink color circle is mapped to a corresponding point in an inscribed circle of the ink color triangle (see rejection of claim 1).

Regarding claim 19, Sawamura et al discloses a computer program stored on a computer readable storage medium (Col. 8 lines 37-39 wherein a ROM stores programs for controlling the CPU) for use in setting a color tone of a monochrome image to be printed (see method and

apparatus as rejected in claims 1 and 18), the program causing a computer to realize the functions as rejected in claim 18 above.

4. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawamura et al in view of Horváth et al and Axelrod as applied to claim 1 above, and further in view of Mark R. Samworth (US 5297058).

Regarding claim 2, Sawamura et al discloses a method according to Claim 1, wherein the three chromatic primary color inks are cyan ink, magenta ink and yellow ink (Col. 8 lines 37-43 wherein the three chromatic primary colors are cyan, magenta and yellow).

Sawamura et al fails to expressly disclose wherein the inks constitute output of a one-dimensional lookup table that is used for color conversion during printing of a monochrome image to obtain output of ink amounts for the plural ink colors in response to input of a lightness tone value of an image.

Samworth, in the same field of endeavor of creating monochrome images with color tones utilizing color inks (Abstract), teaches the inks constitute output of a one-dimensional lookup table that is used for color conversion during printing of a monochrome image to obtain output of ink amounts for the plural ink colors in response to input of a lightness tone value of an image (Col. 5 line 65 through Col. 6 line 7 wherein ink amounts are determined from the color conversion look up table which converts lightness values to dot coverage (density) of inks when printing the color toned monochrome image).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as disclosed by Sawamura et al wherein the three chromatic primary color inks are cyan, magenta and yellow to utilize the teachings of Samworth wherein the inks constitute output of a one-dimensional lookup table that is used for the plural ink colors in response to input of a lightness tone value of an image because there is a need [in the art] for predictably generating duotones from monochromatic originals whereby given an original monochrome image, and a particular transfer function selected to reproduce this image in halftone with tone values, that is, lightness, which are desirable, one may readily derive new transfer functions for pre-selected colorants such that images generated for each colorant using the derived new transfer functions for each colorant will produce an image when combined in superposition as by printing, in which the tonal range, i.e., lightness, will be the same or substantially the same as in an image produced using the transfer function selected for the original monochromatic reproduction." (Col. 2 line 61 through Col. 3 line 9, Samworth).

Regarding claim 16, Sawamura et al discloses a method according to Claim 1. Sawamura et al fails to disclose further comprising the steps of:

determining an ink amount adjustment value for each color component based on the intensity value for each color component; and

adjusting an ink amount for each color component using the ink amount adjustment value for each color component,

wherein relationship between the intensity value of each color component and the ink amount adjustment value for each color component is established independently for each color component.

Samworth et al, in the same field of endeavor of applying a tone to a monochrome image (Abstract, wherein a method for reproducing a monochrome original using at least two colorants is disclosed), teaches determining an ink amount adjustment value for each color component based on the intensity value for each color component (Col. 3 lines 49-50 wherein a weighting factor is determined for each colorant according to the lightness value previously established for the output image), adjusting an ink amount for each color component using the ink amount adjustment value for each color component (Col. 8 lines 22-32 wherein the weighting factor is applied to each colorant thereby adjusting the amount of ink ejected) wherein relationship between the intensity value of each color component and the ink amount adjustment value for each color component is established independently for each color component (Col. 8 lines 22-32 wherein weighting factors are established for black and cyan independently. Also see Col. 3 line 49-50 wherein a color weight factor is derived for each colorant).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as disclosed by Sawamura et al wherein a color tone setting window is provided for setting a color tone of a monochrome image to utilize the teachings of Shimada et al wherein an ink amount adjustment value is determined, the ink amount for each color component is adjusted using the determined adjustment value wherein relationship between the intensity value of each color component and the ink amount adjustment value for each color component is

established independently for each color component to produce an image maintaining the original lightness for any hue or gradation for a particular colorant combination.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sawamura et al in view of Horváth et al and Axelrod as applied to claim 1 above, and further in view of Hiroyuki Okawara et al (US 5317678).

Regarding claim 7, Sawamura et al discloses a method according to Claim 1, the step (b) includes a step of adjusting the color tone of the monochrome sample image based on the color component intensities representing the three chromatic primary color inks that are set using the ink color circle (Col. 3 line 66 through Col. 4 line 2).

Sawamura et al fails to expressly disclose wherein the color tone setting window further includes a sample image display area for displaying a monochrome sample image, and

Okawara et al, in the same field of endeavor of color adjusting an image utilizing a color circle (Col. 15 lines 5-18), teaches wherein the color tone setting window further includes a sample image display area (Fig. 6 numeral 614) for displaying a monochrome sample image (Col. 13 lines 37-42; the monochromatic sample has already been established given Sawamura et al).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the color tone setting window as disclosed by Sawamura et al to extend its capabilities to include a sample image display area for displaying the monochrome sample image as taught by Okawara et al to allow the viewer to visualize the tonal adjustments made, real time.

6. Claims 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawamura et al in view of Horváth et al and Axelrod as applied to claim 1 above, and further in view of Eni Oken et al (Color Schemes Document 1999 - Can You Imagine Software, Inc.©).

Regarding claim 8, Sawamura et al discloses a method according to Claim 1, wherein the color tone setting window is able to display the ink color circle (see rejection of claim 1).

Sawamura et al fails to disclose wherein the color tone setting window is able to display color sliders.

Oken et al, in the same field of endeavor, teaches wherein the color tone setting window is able to display color sliders (Pg. 11, display window wherein a user can switch between "color wheel" and "sliders").

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the color tone setting window which is able to display an ink color circle as disclosed by Sawamura et al to utilize the teachings of Oken et al wherein the tone setting window is able to display an ink color circle and color sliders to provide the user with a creative means for choosing a color in the color wheel or a "more logical approach to choosing colors" (Pg. 15, Color Schemes).

Regarding claim 9, Sawamura et al in combination with Oken et al discloses a method according to Claim 8, wherein the color sliders include three ink color sliders used to set the color component intensities representing the three chromatic primary color inks (see rejection of

claim 8 wherein the color sliders of the figure are used to set color intensities representing either red, green, and blue or cyan, magenta and yellow, Pg. 15).

Regarding claim 10, Sawamura et al in combination with Oken et al discloses a method according to Claim 8, wherein the color tone setting window includes a first window that has the ink color circle (see rejection of claim 8 wherein the figure shows the tab for displaying a "first" window having the ink color circle, Oken et al) and a second window that has the color sliders (see rejection of claim 8 wherein the figure shows the tab for displaying a "second" window having the color sliders, Oken et al) such that the first and second windows are switched to be selectively displayed according to user selection (Selecting the tabs at the top of the display switches between windows as shown on Pg. 11 element 4 (interface tabs), Oken et al).

Regarding claim 11, Sawamura et al discloses a method according to Claim 10. Sawamura et al fails to expressly disclose wherein when the first window is switched to the second window according to user selection, the color tone specified via a specified point in the ink color circle is reflected and displayed on the color sliders.

Oken et al teaches the color tone specified via a specified point in the ink color circle is reflected and displayed on the color sliders (Pg. 13 wherein a user can select a color from the color wheel and (Pg. 15) use the sliders to fine tune the color chosen. This means the color which is chosen on the color wheel has to be represented first by the color sliders in order for there to be fine tuning of the color of interest).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Oken et al wherein when the first window is switched to the second window according to user selection, the color tone specified via a specified point in the ink color circle is reflected and displayed on the color sliders in the invention as disclosed by Sawamura et al wherein a color tone setting window is used to set the tone of a monochrome image because the modification would have constituted the mere arrangement of old elements with each performing the same function it had been known to perform, the combination yielding no more than one would expect from such an arrangement. Combining these prior art elements would have provided the predicted results as set forth above.

Regarding claim 13, Sawamura et al discloses a method according to Claim 8. Sawamura et al fails to disclose wherein the color tone setting window has buttons to set multiple basic color tones, such that when a user selects one basic color tone, the specified point in the ink color circle and slider positions of the color sliders are displayed at a position indicating the selected basic tone.

Oken et al teaches wherein the color tone setting window has buttons to set multiple basic color tones (Pg. 17 wherein a user can select a color based on common names), such that when a user selects one basic color tone (User selecting a common color name), the specified point in the ink color circle and slider positions of the color sliders are displayed at a position indicating the selected basic tone (see rejection of claim 11 wherein the interface tabs are correlated and used to change the color wheel display into other controls that allow fine-tuning of single colors

(Pg. 10). This suggests the interface tabs will reflect the color chosen and change when a new color is selected.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as disclosed by Sawamura et al wherein a color tone window is provided with a color circle for selecting a tone for a monochrome image to utilize the teachings of Oken et al wherein the color tone window has buttons to set multiple basic color tones such that when a user selects one basic color tone, the specified point in the ink color circle and slider positions of the color sliders are displayed at a position indicating the selected basic tone to allow a user to easily select a color of choice if a known color is desirable.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawamura et al in view of Horváth et al and Axelrod as applied to claim 1 above, and further in view of Kasumichi Shimada (US 2003/0038870 A 1).

Regarding claim 14, Sawamura et al discloses a method according to Claim 1.

Sawamura et al fails to disclose further comprising the steps of:

(c) providing a reference one-dimensional lookup table that inputs an image lightness tone value and outputs ink amounts for plural types of ink including multiple chromatic inks; and

(d) generating a printing-use one-dimensional lookup table for use in printing of a monochrome image by adjusting amounts of the multiple chromatic inks in the reference one-dimensional lookup table in accordance with the color component intensities representing the three chromatic primary color inks determined in the step (b).

Shimada, in the same field of endeavor of applying tones to monochrome images (¶ [7] wherein a printing system is provided to ensure a sufficient selection rang of saturation and printing a monochromatic image of a high image quality having a sufficient power of expression), teaches providing a reference one-dimensional lookup table that inputs an image lightness tone value and outputs ink amounts for plural types of ink including multiple chromatic inks (Fig. 6 wherein the brightness tone value is directly correlated to the amount of ink ejected by the chromatic and achromatic colorants) and generating a printing-use one-dimensional lookup table for use in priming of a monochrome image by adjusting amounts of the multiple chromatic inks in the reference one-dimensional lookup table in accordance with the color component intensities representing the three chromatic primary color inks determined in the step (b) (¶ [103] wherein look up tables are generated for printing the image utilizing the 256 gray scale levels by adjusting either cyan or magenta color components to obtain the desired effect, along with three achromatic color inks ¶ [67]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as disclosed by Sawamura et al wherein a color tone setting window is provided for setting a color tone of a monochrome image to utilize the teachings of Shimada et al wherein a reference one-dimensional lookup table that inputs an image lightness tone value and outputs ink amounts for plural types of ink including multiple chromatic inks is provided and generating a printing-use one-dimensional lookup table for use in printing of a monochrome image by adjusting amounts of the multiple chromatic inks in the reference one- dimensional lookup table in accordance with the color component intensities representing the three chromatic primary color inks because the modification would have constituted the mere arrangement of old

elements with each performing the same function it had been known to perform, the combination yielding no more than one would expect from such an arrangement.

Regarding claim 15, Sawamura et al discloses a method according to Claim 14, wherein multiple inks having different concentrations of identical color component are usable (see rejection of claim 14 wherein K, k1 and k2 are usable and all represent some concentration of the black component).

Sawamura et al fails to disclose amounts of the multiple different-concentration inks are adjusted using an identical color component intensity value.

Shimada teaches amounts of the multiple different-concentration inks are adjusted using an identical color component intensity value (¶ [109] wherein the three kinds of Black color inks are adjusted according to the brightness of a monochromatic image and the appropriate black color ink or inks are used).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method as set forth in the rejection of claim 14 above wherein multiple inks having different concentrations of identical color component are usable to incorporate the teachings of Shimada wherein amounts of the multiple different-concentration inks are adjusted using an identical color component intensity value to enable a user to select an appropriate Black color ink according to the brightness of the image thereby diminishing the gap in brightness at the time of replacing various chromatic color inks with Black color inks.

Allowable Subject Matter

Claims 4-6 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any subsequent prior art which teaches the corresponding point in the ink color triangle corresponding to an arbitrary point in the ink color circle of claim 1, being mapped such that the corresponding point is present on a straight line connecting the center of the ink color circle and the arbitrary point among other patentable subject matter as recited in claims 5 and 6. In addition to when the user instructs that the second window be switched to the first window, switching to the first window is prohibited and display of the second screen is maintained, or a warning display is issued indicating that the attempted switch to the first window is invalid, as recited in claim 12.

Response to Arguments

9. Applicant's arguments filed September 21, 2009 have been fully considered but they are not persuasive.

Applicant's remarks: As a color can be easily selected by the color circle 101 shown in the Sawamura reference, one having ordinary skill in the art would not have seen any need to use mapping from the color circle 101 to a color triangle. As such, there would not have been any motivation for one having ordinary skill in the art to combine the applied references in the manner proposed by the Examiner.

Examiner's response: Examiner disagrees. The combination was not made for the "ease of use in selecting a color" from the color circle but rather the well-known principle of establishing equations for determining intensity values of each primary color given the point selected within the color circle. The color triangle provides equations for determining intensity values given the point in the color circle, as clearly shown in the combination made above.

Applicant's remarks: Applicant is not aware of any teachings or well-known art regarding mapping from a circle to a triangle. Consequently, the Examiner's assertion that such mapping would have been obvious to one having ordinary skill in the art is not supported by the applied references, and instead is based on improper hindsight gleaned from Applicant's disclosure.

Examiner's response: Mapping from the color circle to the triangle is advantageous for the purpose of determining the intensity at the given point using the well-known equations provided by the color triangle which is clearly supported by the Figs. and cited portions of the prior art of record.

Applicant's remarks: In color management technology, the equations applied to the additive color mixture of RGB are significantly different from those applied to the subtractive color mixture of CMY. For example, in the additive color mixture, tristimulus values of any color can be represented by simple addition of the tristimulus values of the RGB components, whereas in the subtractive color mixture tristimulus values of a color cannot be represented by simple addition or subtraction of the tristimulus values of the CMY components. As such, one having ordinary skill in the art would not have been motivated to modify the RGB color triangle taught by Horváth to a CMY color triangle.

Examiner's response: Examiner feels this argument has nothing to do with determining intensity values of each color given a point within a color circle. The equations for finding the intensity values of the vertices of the triangle as disclosed by Applicant are identical to those in the prior art of record, as shown in Fig. E of page 3283 as recited in the rejection of claim 1. Therefore, the claim is read upon by the prior art of record and one of ordinary skill in the art at the time of the invention would have had motivation for modifying the RGB color triangle to a CMY color triangle when finding "intensity values within an ink color triangle".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMARES WASHINGTON whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

/Jamares Washington/
Examiner, Art Unit 2625

/J. W./
Examiner, Art Unit 2625

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